

# WC/20%CrC/7%Ni Thermal Spray Powder SURPREX W2007

## ■SURPREX W2007

SURPREX W2007 is an agglomerated and sintered composite powder of WC/20%CrC/ 7%Ni for thermal spray.

<Product feature>

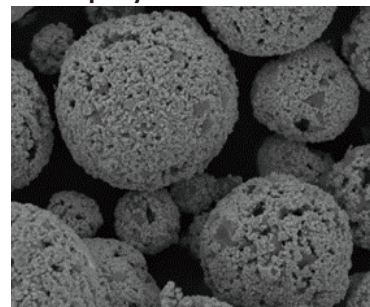
1. Free of spitting by powder classification technology and particle strength control
2. Designed for various types of High-Velocity Flame Spray Guns to achieve higher deposition efficiency

## ■Typical Particle Size Distribution

Type	Size (μm)	+53	+45	+38	+32	-20	-15	-10
L	-53+15	2.8	9.4	43.4	—	14.1	4.0	—
J	-45+15	—	3.3	17.7	28.8	15.5	3.2	—
D	-38+10	—	—	1.6	4.4	—	18.4	3.2

FUJIMI has sophisticated classification technology and 3 types of powder size are available for in the SURPREX W2007 range to suit different spray guns. Powder size can also be customized to suit a wide range of application needs.

## ■SEM Image of Spray Powder Particles

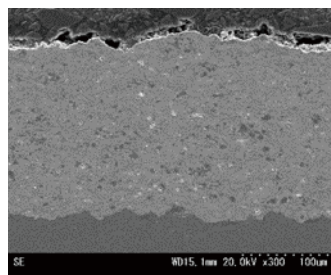


## ■Typical Chemical Composition

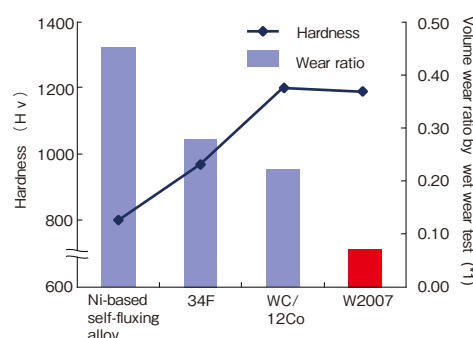
化学成分 (wt%)				
W	C	Cr	Ni	Fe
Bal.	7.1	17.4	6.8	0.1

## Coating Characteristics

### ■Structure of SURPREX W2007



### ■Comparative Wear Ratio of Various Materials



A Comparison is made of wet wear resistance by wet wear test among W2007 and three popular wear resistant materials. W2007 exhibit high hardness and wet wear resistance.

(\*1) A specimen immersed in a mixture of 40kg of A#8 abrasives and water revolves at 30rpm and orbits at 50rpm. The wear of the specimen is, then, rated against the base value of substrate (STKM12C) tested for 200 hrs.

(\*2) WC12%Co blended with Ni base self-fluxing alloys

### ■Corrosion Resistance of WC/20CrC/7Ni

Corrosive solution	WC/20CrC/7Ni	WC/10Co/4Cr
10wt% Hydroperoxide	◎	△
30wt% Iron (III) chloride	○	×
10wt% Sodium hydroxide	◎	△
10wt% Nitric Acid	◎	◎
10wt% Sulfuric Acid	×	○
3wt% Hydrochloric Acid	×	○

Corrosion test has been carried out by using thermal spray coating specimen in order to investigate the corrosion resistance of WC/20CrC/7Ni, compared to WC/10Co/4Cr. Both thermal coating specimen immersed in corrosive solutions and measured the volume loss in this test. This test has shown WC/20CrC/7Ni didn't dissolve in hydroperoxide, sodium hydroxide and nitric Acid, but sulfuric acid and Hydrochloric Acid dissolved W2007. On the other hand, WC/10Co/4Cr didn't dissolved in sulfuric acid and hydrochloric acid. Thermal spray coating must be chosen depending on the combinations of materials and corrosive environments.

Corrosion resistance: Bad × ⇒ △ ⇒ ○ ⇒ ◎ Excellent

## Applications

### ■Applications of W2007

<Coating Characteristics>

- Corrosion resistance
- Chemical stability



<Applications>

- Chemical plant equipment
- Film rolls
- Paper manufacturing coating rolls

W2007 is applied in the iron industry, the Chemical industry and the paper industry with W2007 corrosion resistance.